

In the claims:

Claims 1-29 cancelled.

30. (currently amended) A transport container for keeping frozen material chilled, comprising an insulating chamber; an insulation which is a superinsulation with a coefficient of thermal conductivity λ of $< 0.005 \text{ W/m K}$ and encloses said insulating chamber; an inner container ~~removably~~ arranged in said insulating chamber, said inner container having at least one chilling chamber for the material and at least one refrigerant chamber which is permanently hermetically sealed, such that there is no insulation between said inner container and said chilling chamber; and a refrigerant located in said refrigerant chamber and giving off cold by solid/liquid phase transformation, said refrigerant being a pure organic substance undergoing the phase transformation between solid and liquid state in a temperature range from -15° to -100°C , and having a heat of melting of at least 50 J/ml .

31. (previously presented) A transport container as defined in claim 30; and further comprising a chilling jacket having a jacket chamber which contains a second refrigerant with a solid/liquid phase transition in a temperature range from 0 to -15°C ; and an insulating jacket

which shields said chilling jacket from outside and has a superinsulation with a coefficient of thermal conductivity λ of $< 0.01 \text{ W/m K}$.

32. (previously presented) A transport container as defined in claim 30, wherein said refrigerant chamber is configured like said chilling chamber in said inner container.

Claim 33 cancelled.

34. (previously presented) A transport container as defined in claim 30, further comprising at least one additional refrigerant container with a refrigerant chamber for arrangement in said insulating chamber, wherein at least one of said inner container and said additional container is composed of a material selected from the group consisting of high-grade steel, titanium, a titanium alloy, aluminum, and a low-temperature resistant plastic.

35. (previously presented) A transport container as defined in claim 30, wherein said refrigerant chamber has a filling opening, and wherein said filling opening is welded closed.

Claims 36 and 37 cancelled.

38. (previously presented) A transport container as defined in claim 30, wherein said refrigerant chamber has a filling opening, and wherein said filling opening is closed on an inside by a screw stopper and welded closed on an outside.

Claims 39-43 cancelled.

44. (previously presented) A transport container as defined in Claim 30, wherein said inner container has a double-walled hollow cylinder including an inner wall and an outer wall and also a bottom at one end and an annular wall at the other end, said refrigerant chamber being formed between said inner wall and said outer wall, and said annular wall and said bottom, and said chilling chamber being arranged centrally and delimited by said inner wall and said bottom.

45. (previously presented) A transport container as defined in Claim 44, wherein said inner wall of said cylinder has a thread for an element which closes said chilling chamber and is selected from the group consisting of a screw cover and a screw stopper.

46. (previously presented) A transport container as defined in Claim 30, wherein said insulation is configured as a cup with said

insulating chamber which is adapted to said inner container and is closable by an insulating closure.

47. (previously presented) A transport container as defined in Claim 30, wherein said insulation is surrounded by a rigid protective tube having ends which are closed respectively by a cover.

48. (previously presented) A transport container as defined in Claim 30, wherein said refrigerant is a refrigerant which melts/solidifies as the temperature $< -30^{\circ}\text{C}$.

49. (previously presented) A transport container as defined in Claim 30, wherein said refrigerant is a refrigerant which melts/solidifies as the temperature $< -85^{\circ}\text{C}$.

50. (previously presented) A transport container as defined in Claim 30, wherein said refrigerant is a refrigerant selected from the group consisting of octane, 1-hexanol, 2-hexanone, hexanal, pyridine, 1, 2, 4-trimethylbenzene, 1, 3, 5-trimethylbenzene and chlorobenzene.

51. (previously presented) A transport container as defined in Claim 30, wherein said superinsulation has a coefficient of thermal conductivity $\lambda < 0.002 \text{ W/m K}$.